

organism was not accompanied by any figure. By referring to my description of this foraminifer from Funafuti*, it will be seen that it plays a very important part in the formation and consolidation of reef-rocks, and under certain conditions forms calcareous nodules as large as or larger than a pigeon's egg by continuous laminar growth. The young form of these extraordinary developments, however, resembles the *Polytrema planum* of Carter. My object in writing this note, therefore, is to withdraw the name *involuta* in favour of *P. planum*.

The various forms of *Polytrema* are not alone in making encrusting growths and nodules, for other well-known adherent foraminifera, such as *Gypsina* and *Carpenteria*, encrust and enclose organic particles until they produce more or less sphaeroidal and elliptical nodules of considerable size; and these I hope to deal with shortly.

XIV.—*Remarks upon the Genus Rhysodes, with Descriptions of some new Oriental Species.* By GILBERT J. ARROW.

THE small Coleopterous family Rhysodidæ, the known species of which are fast becoming numerous, has been separated into various genera according to slight characters, many of which will probably be found insufficient as new forms occur. They will, however, serve for present purposes, if some agreement can be arrived at as to their relative value. The confusion arising from the want of such agreement was largely dispelled by Mr. George Lewis, who published in 1888 a list of the known species. His views, however, have not been entirely adopted abroad, while the adoption of his genus *Epiglymmius* and another (*Rhysodiastes*) since proposed by Fairmaire necessitate, in my opinion, the formation of several more for species exhibiting equally good differential characters. Since commencing this paper I have learnt that M. Grouvelle contemplates the publication of a monograph on the family; and since he has more complete materials than myself, I have reduced my original intention to that of a partial review of the genus *Rhysodes* alone. I shall accordingly leave generic questions entirely to that entomologist, and in the list of species which follows I include all the forms known to me which are distinguished by the possession of wings and the external conformation which accompanies that condition.

* Journ. Linn. Soc. Lond., Zool. vol. xxviii. (1900) pp. 1 and 17, pl. ii. fig. 3, and text-fig. 2.

Although the family appears to be represented in every part of the world, its geographical distribution has given no support whatever to those who have attempted its classification. It is remarkable that, although the European species described amount only to five, each of the four genera into which the family has been divided is represented among them (for *Clinidium marginecolle*, Reitter, is very near the type of Fairmaire's genus *Rhysodiastes*). The distribution of the Rhysodidæ, indeed, is altogether highly peculiar, Tropical and South America alone seeming to show any individuality in its representatives, which belong only to the apterous section. The South-American *quadristriatus*, though hitherto remaining in *Rhysodes*, also belongs to *Rhysodiastes*, as well as *Clinidium costatum* of Chevrolat (not Guérin, as in Mr. Lewis's catalogue).

Several other rectifications require to be made in the list of species of *Rhysodes* given by Mr. Lewis. *R. proprius*, Broun (wrongly quoted "*probrius*" and referred to p. 215 instead of p. 216 in the 'Manual of New Zealand Coleoptera'), must be removed to *Clinidium*. On the other hand, *R. pensus*, Broun, has been incorrectly transferred to the latter genus as synonymous with *C. arcuatum*, Chev. This is evidently a mere slip, as there is no connexion between the two. *R. pensus* is one of the most easily recognizable species of *Rhysodes*. *R. tubriceps*, Fairm., has already been announced by its author, who was himself responsible for sinking the name, as distinct from *R. canaliculatus*, Cast. No reference to the last species is given by Mr. Lewis; it was described in the 'Revue Entomologique,' vol. iv. p. 56.

Of the new species described here three are from India, and are the first hitherto recorded from that country. The metropolis of the family is evidently the Indian Ocean, where it seems the species will ultimately be found very numerous.

The following table will, I hope, simplify the identification of the new forms: to increase its usefulness I have included all the species of the genus known to me:—

Head with lateral lobes approximating before and behind; median elevation ending posteriorly	
beyond hind border.....	<i>eminens</i> , Broun.
at hind border.....	<i>sulcatus</i> , Fabr.
	<i>comes</i> , Lewis.
before posterior pit.....	<i>strabus</i> , Newm.
	<i>armatus</i> , sp. n.
	<i>crassiusculus</i> , Lewis.
in posterior pit.	<i>malaicus</i> , sp. n.
	<i>batchianus</i> , sp. n.
	<i>nicobarensis</i> , Grouv.

exaratus, Serv.
americanus, Lap.
malabaricus, sp. n.
quadraticollis, sp. n.
Taprobanae, Fairm.
niponeusis, Lewis.
Boysi, sp. n.
tubericeps, Fairm.
bucculatus, sp. n.

Head with lateral lobes approximating behind only.

Head with lateral lobes approximating in the middle *anguliceps*, sp. n.

Head with lateral lobes fused with median elevation *pensus*, Broun.

Rhysodes armatus, sp. n.

Cylindricus, piceus, parum nitidus; capite post oculos supra et subtus utrinque producto, lobis posterioribus vertice biapproximatis, parcellissime punctatis, spatio anteriore elevato brevi, medio contracto; prothorace elongato, antice semicirculariter arcuato, postice vix contracto, lateribus medio fere rectis, disco trisulcato, sulcis externis latis, carinis 4 fere parallelis, mediis 2 antice et postice jungentibus; elytris late punctato-striatis; corpore subtus grossissime punctato; tibiis anticis apice bidentatis, dente tertio mediano post apicem.

♂, tibiarum anticarum dente quarto paulo post medium femoribusque anticis medio dentatis, tibiis intermediis et posticis apice lamella longe bispinosa munitis.

Long. 7.5-9 mm.

Hab. Andaman and Nicobar Islands.

The specimens were collected by the late Mr. Roepstorff.

This species is very closely related to *R. strabus*, Newm., of which the type is in the British Museum, but may be distinguished by its rather longer and more parallel-sided prothorax and the coarser punctation in the elytral striae. These two species, together with *R. crassiusculus*, Lewis, differ from all others known to me by the remarkable armature of the legs of the male, as well as by the perforation at the back of the head, which is very small and punctiform and distant from the median elevation. There are also punctures upon the smooth parts of the head and thorax, which are characteristic of this small group.

R. nicobarensis, Grouv., which inhabits the same islands as *R. armatus*, has a very different head, the median elevation extending into the posterior perforation, which is very large.

Rhysodes malaicus, sp. n.

Niger, nitidus, elongatus, capitis lobis prominentibus, supra paulo distantibus, antice et postice leviter convergentibus, spatio mediano

elevato lato, ad loborum medium non attingente, supra oculos carina lævi; prothorace antice semicirculariter arcuato, lateribus curvatis, postice paulo contractis, supra æqualiter quadri-costato; elytris striatis, striis valde et confluentur punctatis, humeris prominentibus: prosterno impunctato, epipleuris prothoracicalibus irregulariter punctatis, corporis reliquo subtus grosse punctato, tibiis anticis apice quadri-spinosis.

♂, femoribus anticis medio dentatis; tibiis posticis apice lamella spinosa armatis.

Long. 7.5 mm.

Hab. Penang.

The typical specimens, of both sexes, were found by Mr. Lamb. The insect very closely resembles *R. nicobarensis*, Grouv., in which, however, the two outer costæ of the thorax are much narrower than the two inner ones. The punctures of the elytra also readily distinguish the two species, those of the latter having so completely coalesced longitudinally as to be nowhere entirely distinct.

R. aterrimus, Chevr., which is described from the same region, has, if the very loose description can be relied upon at all, a very differently formed head to that of the present species.

Rhysodes batchianus, sp. n.

Niger, nitidus, parum elongatus, capitis lobis fortiter emarginatis, antice paululo convergentibus, spatio mediano postice valde dilatato, fere ad loborum medium attingente, supra oculos carina lævi; thoracis lateribus leviter curvatis, postice perpaulum contractis, dorso subæqualiter quadri-costato, costis internis medio valde dilatatis; elytris conjunctim in latitudine ad thoracem æqualibus, fortiter striato-punctatis; corpore subtus grosse punctato, prosterno epipleurisque prothoracicalibus impunctatis, metasterno medio excavato.

Long. 7.5 mm.

Hab. Batchian.

I do not know the male of this species, but its distinctive characters are no doubt the same as in the preceding one, to which *R. batchianus* is closely allied. It is much less attenuated, however, and the two inner costæ of the prothorax are thicker in the middle. Similarly, the two outer costæ are thicker than the corresponding parts of *R. nicobarensis*.

Rhysodes malabaricus, sp. n.

Niger, nitidus, capite longitudine ad latitudinem æquali, lobis prominentibus, extus paulo planatis, vertice fere circulariter perforato,

elevatione mediana angusta ad foramen attingente; antennis brevibus, articulis 2°, 3° et 4° subglobosis, ultimo paulo elongato, cæteris hemisphæricis; prothorace subovali, lateribus antice et postice incurvatis, disco 4-carinato, carinis latitudine fere æqualibus; elytris punctato-striatis, punctis confluentibus, carina semicirculari ad apicem, humeris paulo rotundatis, singulo dente minutissime armato; prosterno impunctato, epipleuris uniseriatim punctatis; metasterno late longitudinaliter sulcato; abdomine grosse punctato, segmento ultimo crebre; pedum anteriorum tibiis utroque latere bidentatis.

♂, femoribus medio acute dentatis, posticorum tibiis apice fortiter incurvatis.

Long. 6·5 mm.

Hab. S. India, Malabar.

The head of this insect is comparatively short and the posterior lobes are broad, very prominent, and appear rather flattened externally owing to the projection of the eyes in front. The antennæ are rather short and thick. The thorax and elytra are similar to those of *R. malaicus*.

Rhysodes quadraticollis, sp. n.

Niger, nitidus, compactus, capite haud elongato, longitudine quam latitudinem parum majore, lobis posterioribus intus valde emarginatis, antice vix, postice valde approximatis, elevatione mediana latissima, ad loborum medium attingente; prothorace quadrato, lateribus fere rectis, antice paulo, postice non convergentibus, margine antico parum arcuato, postico truncato, disco toto trisulcato, carinis fere æqualibus, duabus internis medio paulo crassatis; elytris quam prothoracem vix latioribus, humeris haud rotundatis, undique punctato-striatis; pedibus obscure rufis, tibiis anticis intus 4-dentatis.

♂, femoribus anticis medio dentatis; tibiis posticis spinose lamellatis.

Long. 5–7 mm.

Hab. Malay Archipelago, Tenimber.

Several specimens of this, collected by Mr. Doherty, have been presented to the British Museum by Mr. George Lewis. It more nearly approaches *R. batchianus* than any other species I know; but its squarely-built form, with almost straight sides to the thorax making a nearly continuous outline with the sides of the elytra, distinguish it from all others.

Rhysodes Boysi, sp. n.

Niger, nitidus, depressus, capite trigoni sine carinis aut canaliculis lateralibus, lobis paulo sat profunde emarginatis, foramen parvum

circulare formentibus, elevatione mediana latissima hujus marginem attingente; antennis gracilibus, articulis globosis; thorace elongato, lateribus arcuatis, antice et postice paulo contractis, supra canaliculo medio profundo, sulcis duobus posterioribus deerescentibus ab margine ad medium, striisque tenuis marginalibus; elytris grosse striato-punctatis, interstitio quarto postice valde elevato; corpore subtus fere glabro, tibiis anterioribus quadri-dentatis.

Long. 7 mm.

Hab. India.

The above description is drawn up from two specimens, both females, of which one is now in the British Museum and the other in the Hope Department at Oxford. They were collected by Capt. Boys, and, although no record has been kept of the part of India in which they were found, there is good reason for supposing them to have inhabited the Himalayas.

The prothorax in this species is not costate, but furnished with one entire median groove and two tapering depressions extending from the base, where they are very broad, nearly to the middle. It resembles *R. niponensis*, Lewis, but is more depressed, the elytra more deeply sculptured, and the elevated ridges at the apex of the latter much longer, extending about a quarter of their length. The anterior femora are not toothed in the female.

Rhysodes bucculatus, sp. n.

Angustus, niger, nitidus, capite elongato, lobis parum prominentibus, parvissime irregulariter punctatis, intus postice convergentibus, elevatione mediana quam latitudinem triplo longiore: prothorace antice semicirculariter arcuato, lateribus postice paulo contractis, angulis fere rectis, disco toto trisulcato, carinis lateralibus angustis; elytris grosse lineato-punctatis; pedibus obscure rufis.

♂, femoribus anticis medio dentatis; tibiis posterioribus apice intus laminato-productis.

Long. 6-7 mm.

Hab. Malay Archipelago, Sumbawa.

Several specimens were collected by Mr. Doherty and presented to the British Museum by Mr. George Lewis. This insect is allied to *R. Taprobanae*, Fairm., from Ceylon, but with readily apparent differences. Besides being larger and more elongate, it is uniformly black with the exception of the legs, whereas the Ceylon insect has elytra of a deep chestnut-colour. In the latter, also, the elytra are rather differently sculptured, the punctures being situated in definite

striæ and often confluent. In *R. bucculatus* there is no trace of striæ except adjoining the suture, and the punctures are separate.

Rhysodes anguliceps, sp. n.

Niger, nitidus, parum elongatus, capitis lobis intus non emarginatis, lateraliter post oculos acute productis, supra oculos arcuate canaliculatis, elevatione mediana lata non ad loborum medium attingente; antennis longitudine mediocris; prothoracis lateribus antice valde, postice paulo, incurvatis, disco trisulcato, carinis duabus mediis latis; elytris profunde punctato-striatis, humeris non dentatis; metasterno postice impresso, non sulcato, tibiis utroque bidentatis.

♂, femoribus anticis minute dentatis; tibiis posticis apice laminato-productis.

Long. 6·5 mm.

Hab. S. India, Malabar.

Specimens of this are contained in the British Museum and in the Hope Department at Oxford. It differs from all the other species known to me by the structure of the head, of which the posterior lobes, instead of being, as usual, more or less kidney-shaped, have a circular outline interrupted only at the sides of the head, where they are rather sharply produced backwards. The curved channel above the eyes on each side is also a very distinctive character.

XV.—*Notes on Diptera from South Africa.*

By Miss GERTRUDE RICARDO.

[Concluded from vol. vi. p. 178.]

Bombylidæ.

Triplasius bivittatus, Loew, Neue Beitr. iii. p. 7 (1855); id. Dipt. Südafrik. p. 181 (1860).

Loew described the female; this is probably the male. The dividing nerve, which forms three submarginal cells by joining the second longitudinal and the anterior branch of the third longitudinal vein, is only present on one wing. The dark spots on the hind part of the wing in Loew's description are here rather reduced to dark shading of all the cross-veins, with the exception of the one spot in the apex of the first posterior cell and a faint one on the apex of